# MTS/NAV 2020
# FOCUS AREA

## Environmental Enhancements

# TEAM MEMBERS

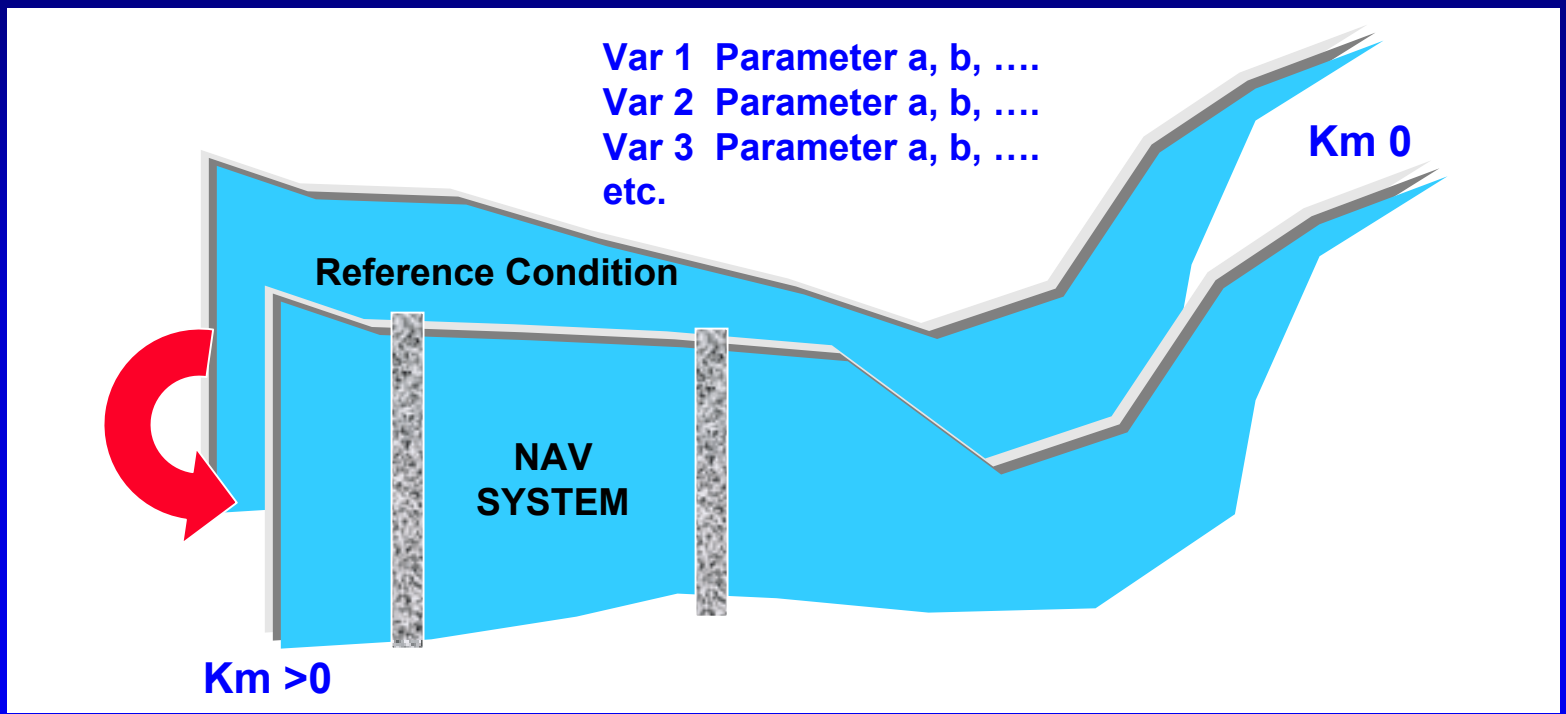
- Chair - John Nestler
- Recorder - Doyle Jones
- Other team members
  - Phillip Malone
  - Lillian Wakeley
  - Jim Wakeley
  - Steve Wilhelms
  - Mike Stewart
  - Jon Zufelt
  - Rich Lampo

# OBJECTIVES/GOALS

Develop Knowledge/Skills/Abilities to reduce system-wide NAV impacts & restore ecological integrity, present & future

# GENERAL APPROACH

- Logic Cascade - brain, book, pencil, and shovel (BBPS)
- Use a conceptual framework "Reference Condition" as the basis of NAV system assessment



# PRIMARY PRODUCTS

- Conceptual framework to address ecological impacts at NAV System level
- KSAs to assess / predict ecological integrity & evaluate navigation impacts
  - CE System-wide, e.g, NEPA compliance, other agencies, TMDLs
  - Non-CE initiatives and actions
- KSAs for restoration & mitigation technologies
  - System-wide
  - Local restoration & enhancement
  - Reduce impacts of local construction & operation

# MAJOR SUB-TASKS
# (Brain- conceptual framework)

- Description - Develop KSA to assess & predict NAV system impacts
- Approach - Develop methods to identify & characterize Reference & Alternative Conditions
- Products - overarching conceptual framework for NAV impacts, statistical & analytical tools, assessment methods

# MAJOR SUB-TASKS
# Book- Science/Knowledge

- Description - Knowledge acquisition to link physical characteristics to ecological response variables
- Approach - Historical review, field investigations, laboratory experimentation, and field demonstrations
- Products - Case studies, literature summaries, and improved assessment methods

# MAJOR SUB-TASKS
# Pencil- Analysis/Simulation

- Description - Assess / predict ecological integrity relative to reference conditions, and evaluate navigation impacts
- Approach -
  - Methods for describing existing conditions
  - Develop / link to tools for simulating driving environmental (e.g., hydraulics, sediment, hydrology) variables
  - Link to ecological response variables
- Products
  - CE System-wide tools for NEPA compliance, other purposes (agency coordination)

# MAJOR SUB-TASKS
# Shovel- Implementation

- Description - Improved designs, construction, and O&M procedures to minimize ecological impacts
- Approach - Develop system-wide and local techniques
- Products - Examples:
  - Low-impact instream construction techniques
  - Non-polluting materials (e.g., coating, lubricants, alternative materials)
  - Improved fish passage and wildlife habitats
  - Alternative operations
  - Maintenance-free materials

# PRODUCT BENEFITS

- Reduce system-wide NAV impacts & restore ecological integrity to meet the goals of NAV 2020
  - Scientific acceptance
  - Public support
  - Economic benefits (e.g., lower costs, improved recreation)
  - Improved compliance with regulations and legislation

# CONNECTIONS

- TO OTHER EFFORTS
  - Crosslink to SMART,
  - RSM,
  - other NAV programs,
  - Infrastructure Program
  - !!! Need Technical Support Program !!!
- POTENTIAL FUNDING SOURCES